WSDOT Stormwater Monitoring

Unlike Caltrans, WSDOT never gets bad press

DOT's repeat polluters

IF THE state Department of Transportation were a private company, it might be out of business by now.

The agency's polluting ways have damaged fish habitat in two Bellevue streams and caused petroleum-based asphalt spills into two Olympia waterways. Investigation is also underway to find out whether DOT construction-site accidents ruined salmon habitat on the Nooksack River. And that's just this year's record.

All this comes at a time the state has launched a campaign to protect wild salmon runs and rehabilitate destroyed habitat. A state agency must be held to the same standards as private industry: polluters pay the price for their neglect. The state Department of Ecology took welcome first steps in that process. Ecology has fined DOT for violating pollution laws. One $72,000 fine was levied for repeat violations in Bellevue, where road construction project officials failed to provide adequate stormwater-control measures. Mud flowed off the State Route 520 project in June and into adjacent wetlands and two creeks, threatening chinook salmon.

This was not an unforeseen hazard; the department was fined $12,000 last year for twice making the same mistake.

Most recently, DOT and one of its private contractors were fined $54,000 for spilling some 715 gallons of liquid, petroleum-based asphalt into Capitol Lake and an additional 335 gallons into a nearby creek. In a hasty effort to complete a paving project on Interstate 5 from Lacey to Tumwater, the agency and contractor, Lakeside Industries of Issaquah, ignored weather reports of an impending storm and applied asphalt on the highway that takes at least an hour of dry weather to set. DOT and Lakeside workers were unable to prevent the goopy mixture of asphalt and rain from contaminating storm drains.

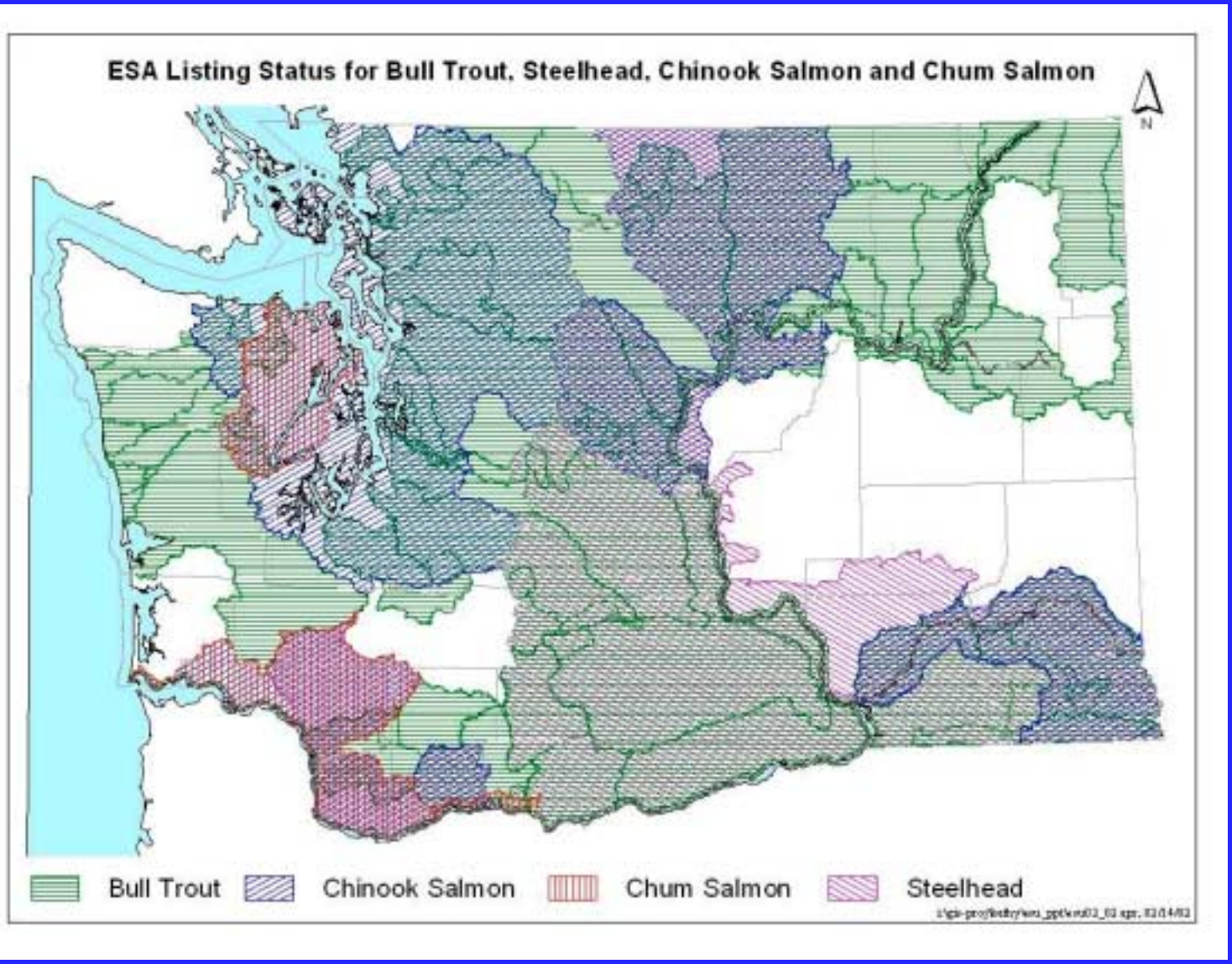
Again, this was not an unforeseen hazard: state officials involved in the spill had received prevention training stemming from a previous DOT construction spill.

DOT officials point out that they do highway construction and maintenance projects worth nearly $1.5 billion every biennium and that most are accident-free. True, but it's not unreasonable to hold public agencies to high standards of environmental protection. Otherwise, how can we expect those standards of private industry?

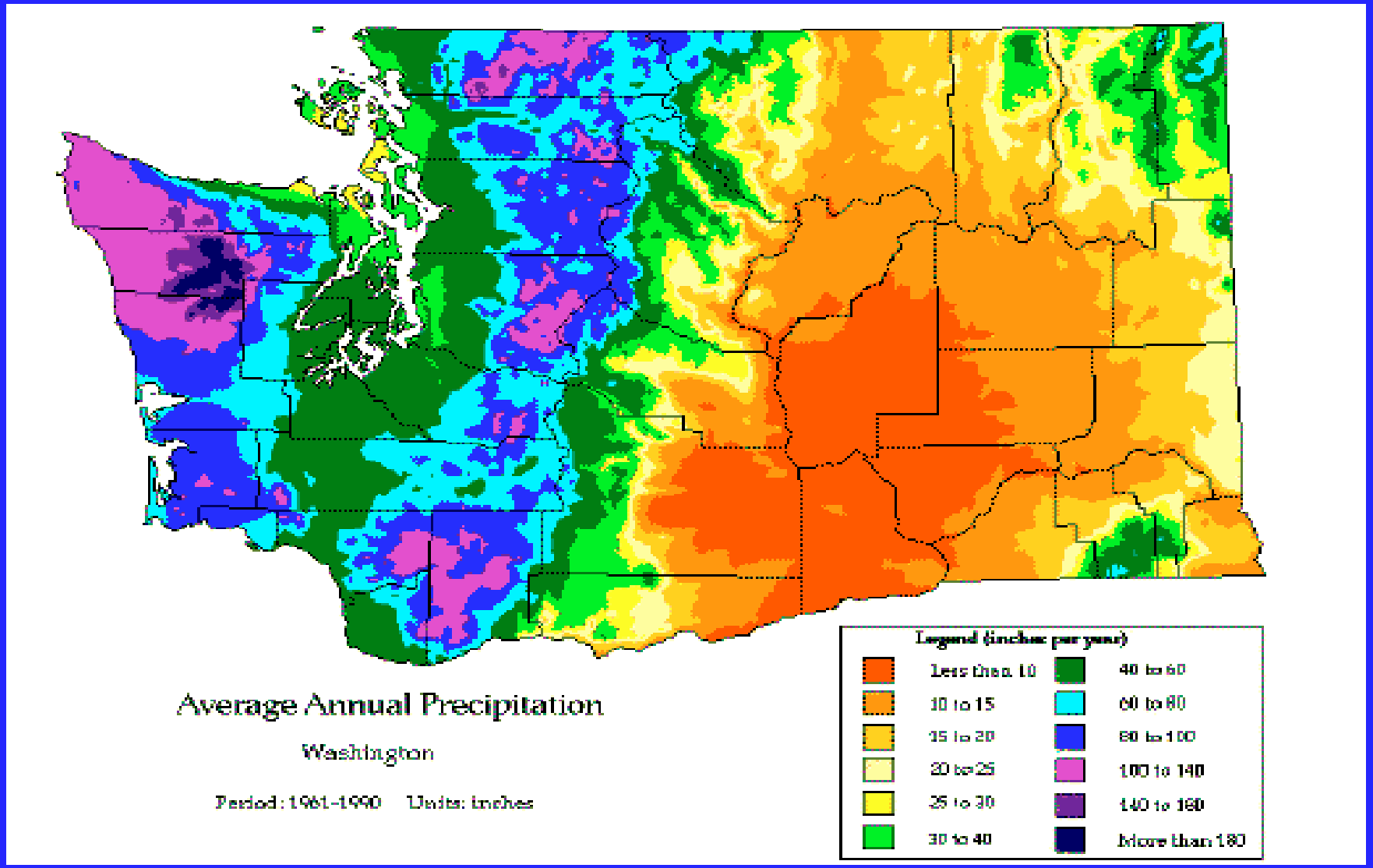
Legal Monitoring Requirements

- NPDES Phase 1 permits (4 areas)
  - Stormwater characterization
  - Priority pollutant /pesticide scan
  - Experimental BMP research
- Other permits, and corrective actions.
  - Construction runoff monitoring (Turbidity, pH, and other construction-related parameters)

ESA Big Stormwater Issue



Precipitation varies from 8 to 220 inches/year
NPDES monitoring areas 25-140 inches/year



Monitoring Resources 01-03

- Stormwater compliance monitoring
  - Two people, part time
  - Consultant contract approx. 100K
- Construction monitoring- done by PE offices
- Research
  - One person part time
  - Partnerships with other organizations

Stormwater Characterization

- Representative sites selected based on ADT
- Sample Mean Event Concentrations
- ISCO samplers
- Analyze for pollutants common to highway runoff: metals, nutrients, hydrocarbons
- Characterizations efforts limited because highway runoff is measured all around the country

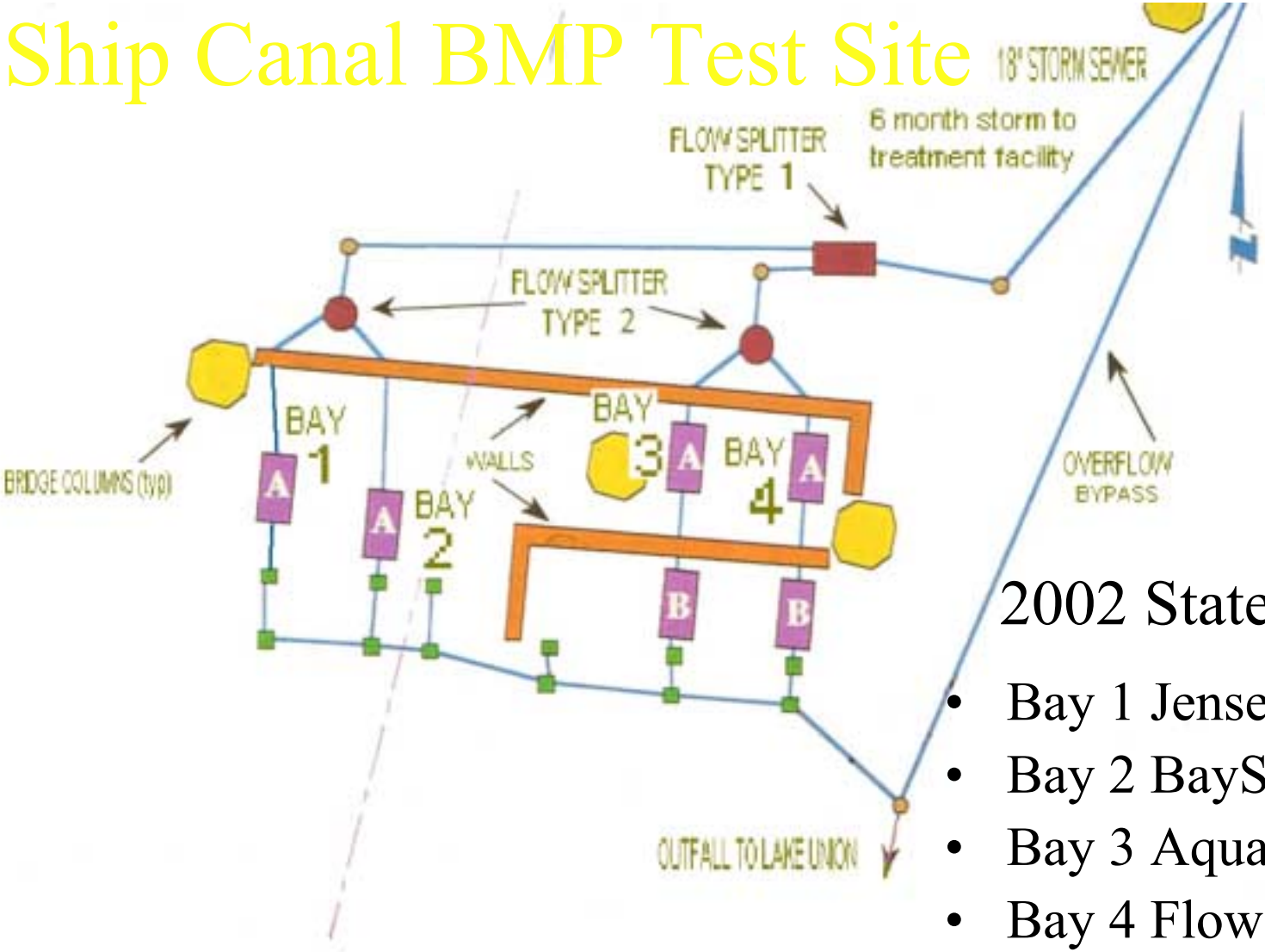
Priority Pollutant/Pesticide Scans

- Representative sites selected based on ADT
- Sediment grab samples
- Analyze for:
  - Metals
  - Pesticides
  - Herbicides

BMP Research Monitoring

- Required to get approval of new BMPs
- Data and testing facilities unavailable so we made our own in cooperation with industry and other stakeholders
- Fully constructed but funding issues are putting monitoring on hold

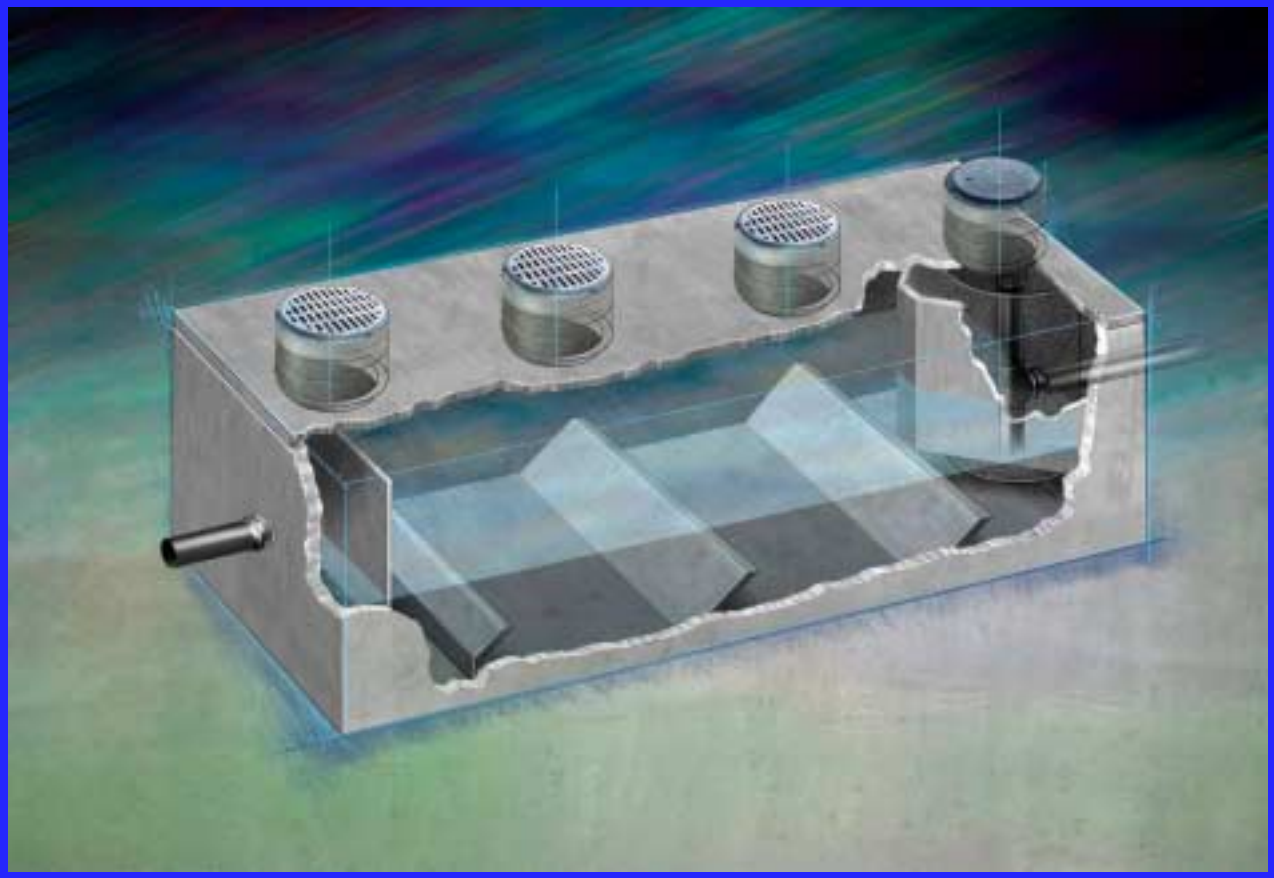
Ship Canal BMP Test Site



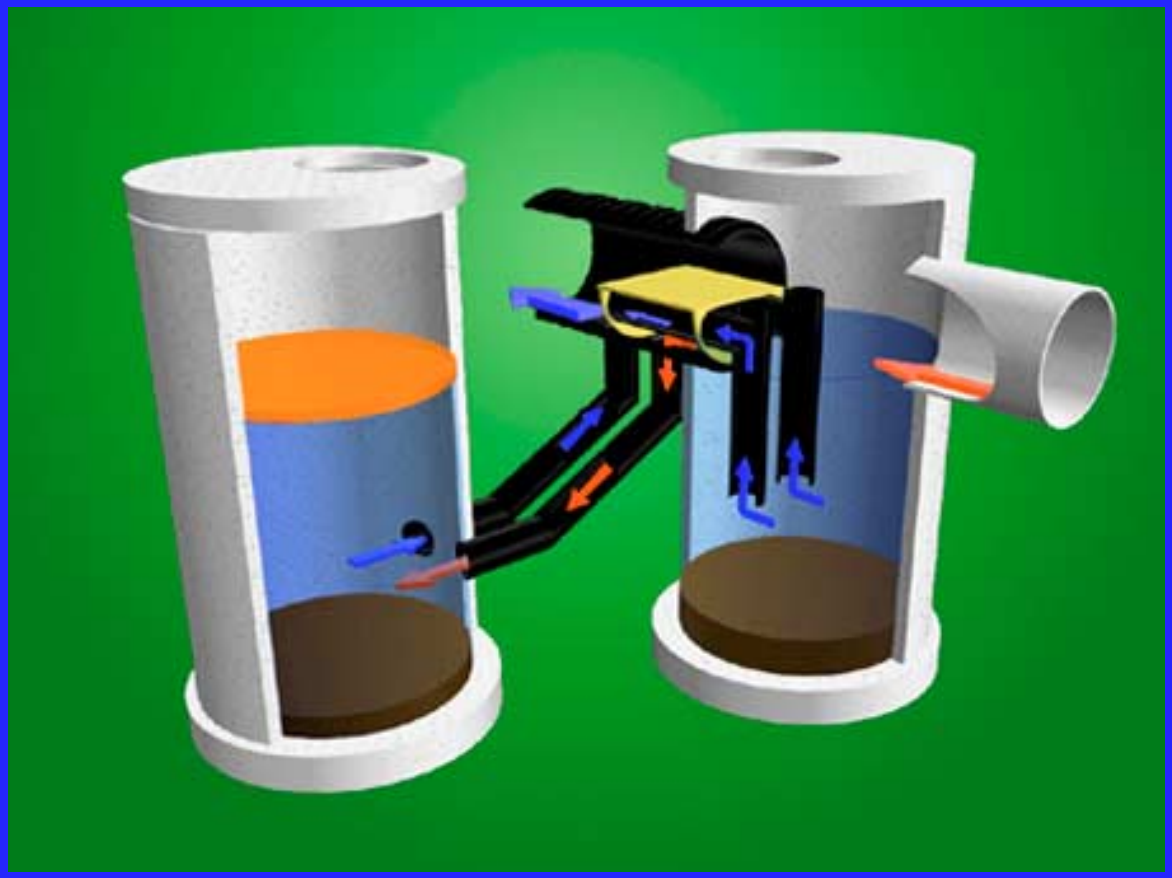
2002 State of the Site

- Bay 1 Jensen
- Bay 2 BaySaver
- Bay 3 AquaShield
- Bay 4 Flow Control (Stormwater Management soon)

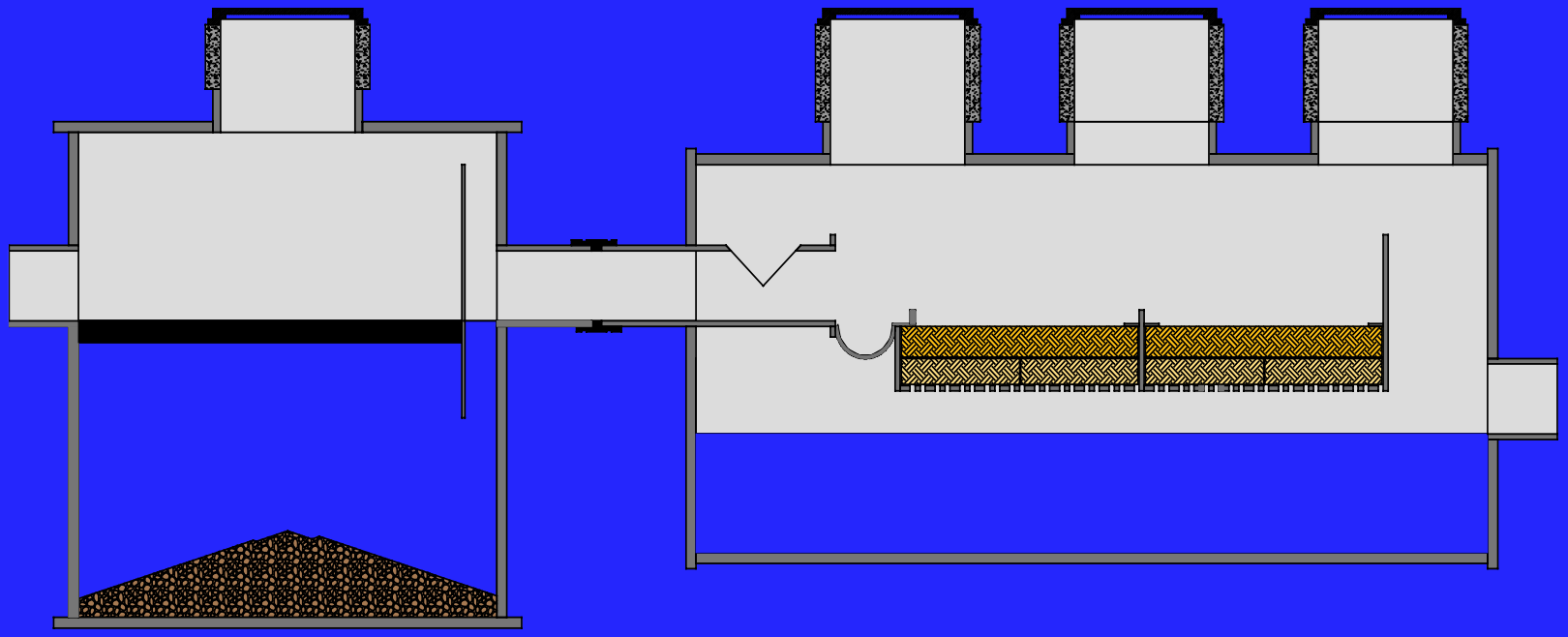
Jensen Precast *Storm Vault*



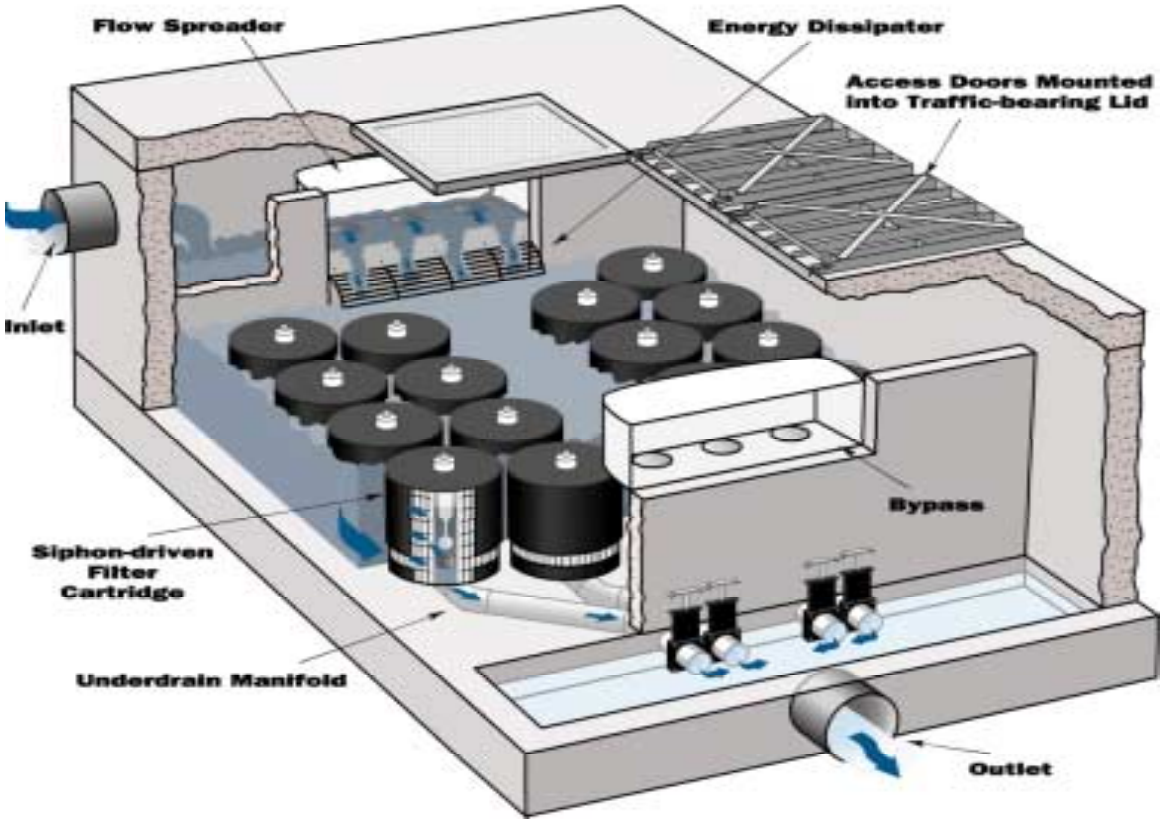
Baysaver Inc. *Baysaver*



AquaShield *AquaFilter*



Stormwater Mgt. *StormFilter*



Construction Runoff Monitoring

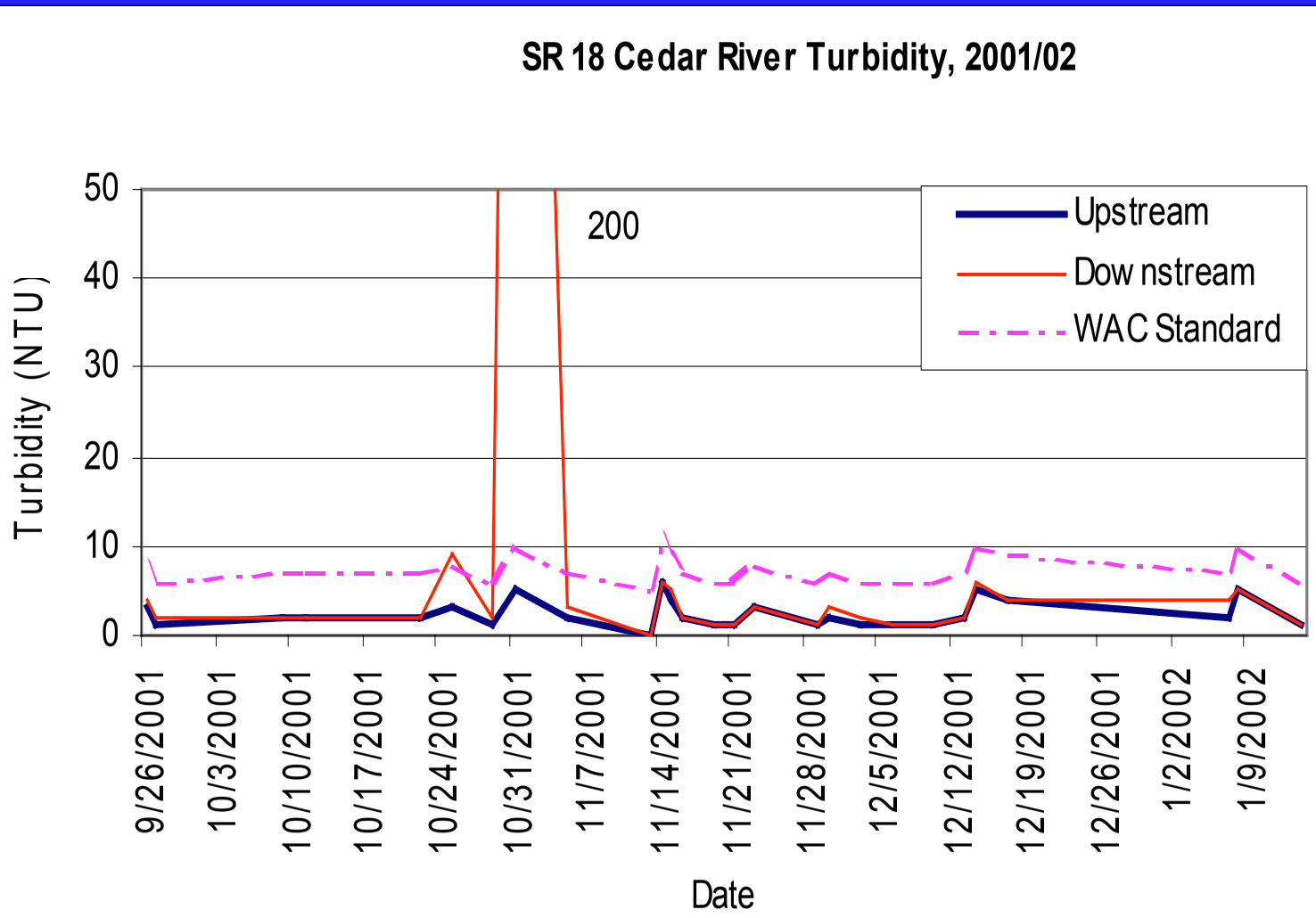
Construction Monitoring

Past

- Based on permit requirements or corrective actions
- Reported to permitting agency with no evaluation beyond site compliance

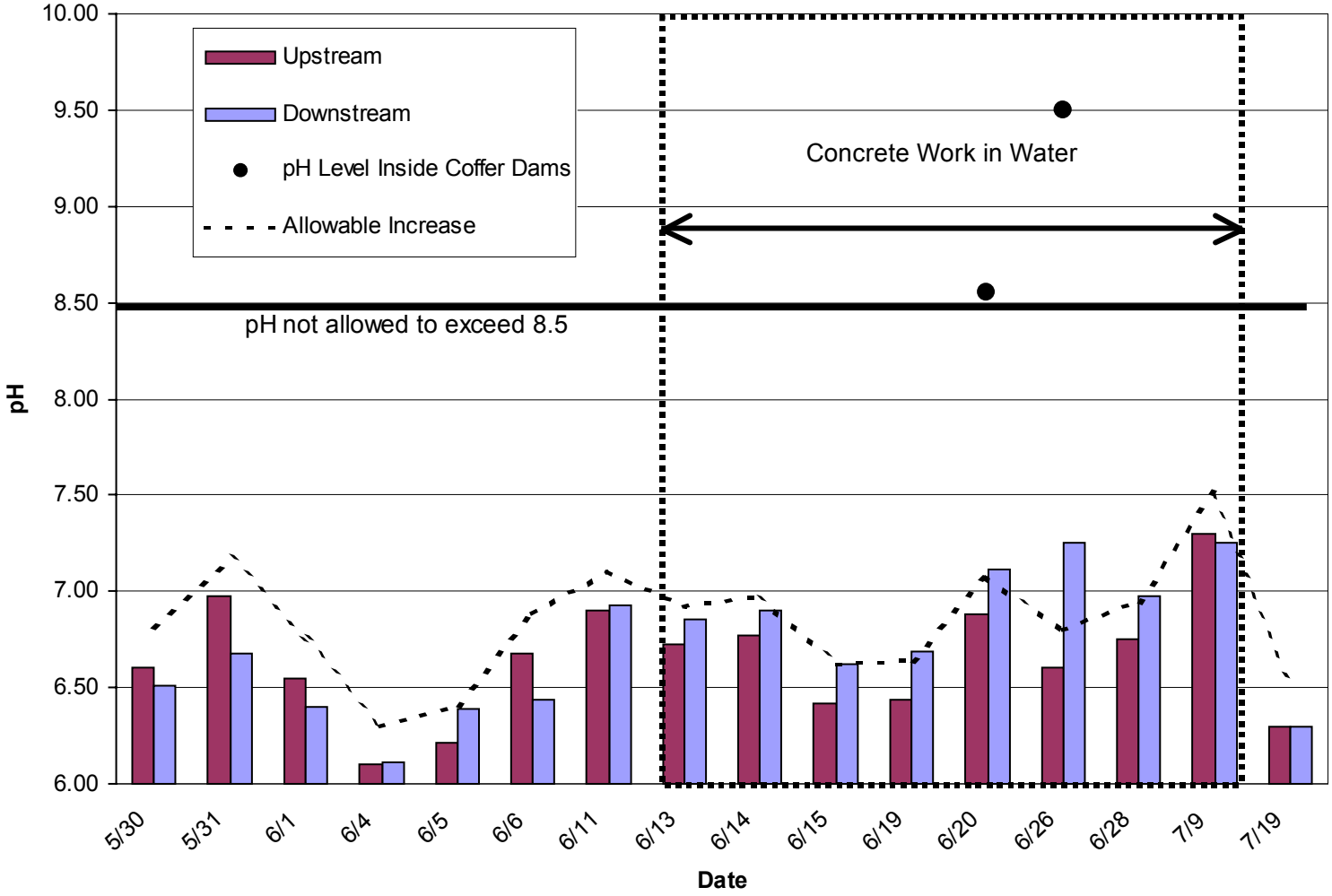
New

- Systematic monitoring based on risk analysis
- Data compiled for effectiveness evaluations
- Reporting of project and program performance to public on internet via “Gray Notebook”

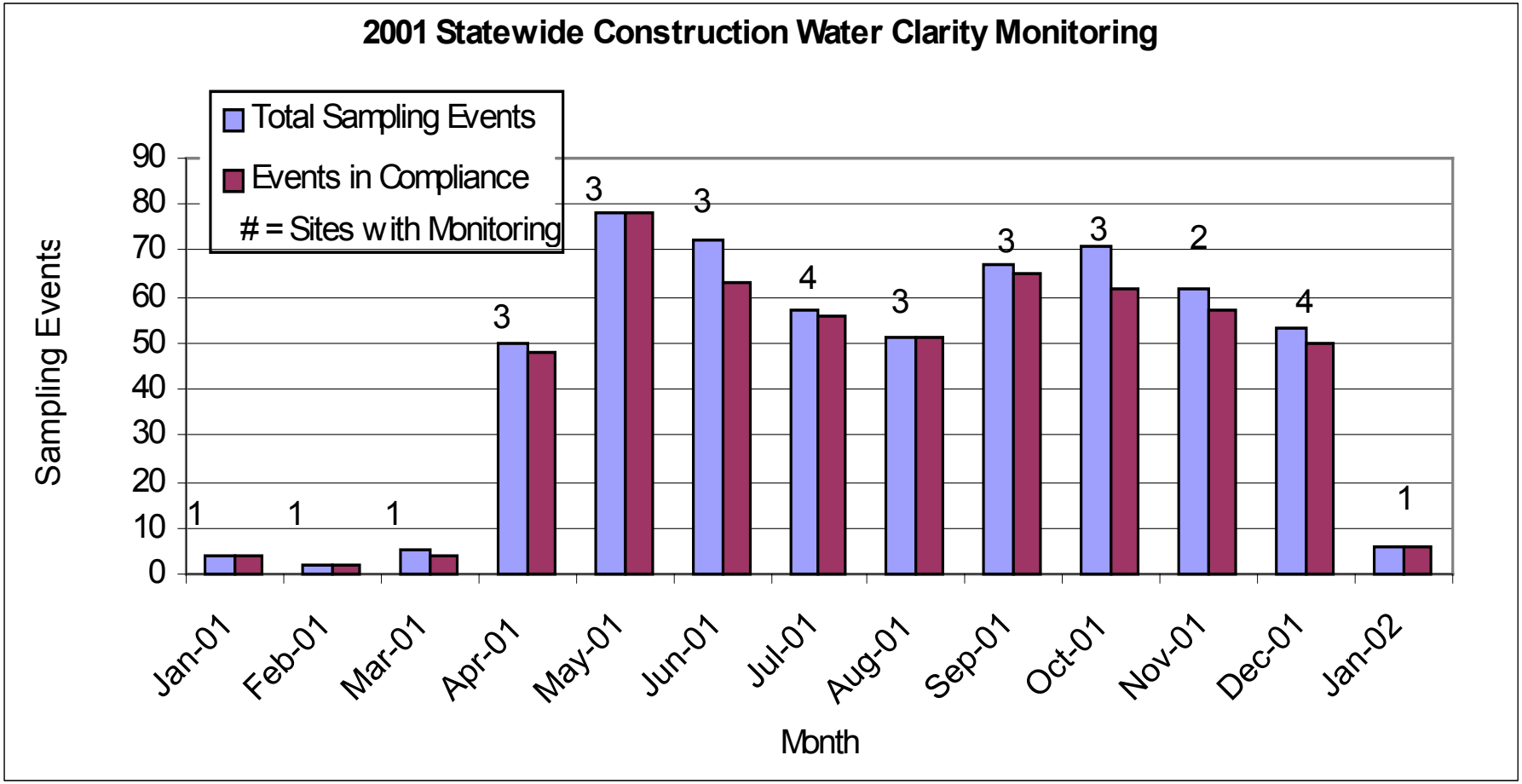

SR 18 Cedar River Turbidity, 2001/02
Turbidity (NTU)
50
40
30
20
10
0
200
Upstream
Dow nstream
WAC Standard
9/26/2001
10/3/2001
10/10/2001
10/17/2001
10/24/2001
10/31/2001
11/7/2001
11/14/2001
11/21/2001
11/28/2001
12/5/2001
12/12/2001
12/19/2001
12/26/2001
1/2/2002
1/9/2002
Date

State Route West Ellensburg: Protecting Wilson Creek pH During Bridge Work

A coffer dam and water treatment pond were used to protect stream pH. Despite elevated pH within the coffer dam, stream pH was unaffected except for small increases on 6/20 and 6/26. Increases were well below the upper 8.5 limit to protect water quality.



Summary reporting



Stormwater Outfall Database

Inventory will contain all outfalls- years out

Monitoring data will be linked to outfalls

Will use to:

Prioritize retrofit work

Evaluate BMP effectiveness

Future Stormwater Monitoring

- Permanent Facilities
  - Dependent on NPDES Phase II permit
  - Want to combine permit for Phase I and II areas
  - Focus more on BMP effectiveness
  - Use monitoring data to narrow the focus on problem areas and pollutants
  - Resisting pressure to characterize receiving waters

Possible Direction for Future Stormwater Monitoring

- Pre-construction characterization for individual projects to justify the need to retrofit/not retrofit or mitigate onsite/offsite
  - SR 509 project approximately $100 Million to retrofit using standard on-site BMPs